

- 27 -

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

- (i) APPLICANT: (other than US) WESTERN HEALTH CARE NETWORK  
(US only): LOCARNINI, S A, BARTHOLMEUSZ, A I, De MAN, R.
- (ii) TITLE OF INVENTION: VIRAL VARIANTS AND METHODS FOR  
DETECTING SAME
- (iii) NUMBER OF SEQUENCES: 20
- (iv) CORRESPONDENCE ADDRESS:  
(A) ADDRESSEE: DAVIES COLLISON CAVE  
(B) STREET: 1 LITTLE COLLINS STREET  
(C) CITY: MELBOURNE  
(D) STATE: VICTORIA  
(E) COUNTRY: AUSTRALIA  
(F) ZIP: 3000
- mb*  
*A1*
- (v) COMPUTER READABLE FORM:  
(A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25
- (vi) CURRENT APPLICATION DATA:  
(A) APPLICATION NUMBER: INTERNATIONAL (PCT)  
(B) FILING DATE: 15-AUG-1997
- (vii) PRIOR APPLICATION DATA:  
(A) APPLICATION NUMBER: AU PROVISIONAL  
(B) FILING DATE: 08-NOV-1996
- (viii) ATTORNEY/AGENT INFORMATION:  
(A) NAME: HUGHES DR, E JOHN L  
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(A) TELEPHONE: +61 3 9254 2777  
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- 28 -

## (2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GGA GTG TGG ATT CGC ACT CC

20

## (2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

GCT CCA AAT TCT TTA TA

17

## (2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

CCT TTA CCC CGT TGC CCG GC

20

## (2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

GCT CCA AAT TCT TTA TA

17

## (2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single

553333 324333333

*MB  
A1  
Cant*

- 29 -

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

GCC GCG TCG CAG AAG ATC TCA AT 23

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

GGT TCT ATC CTA ACC TTA CC 20

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 23 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

GCC TCA TTT TGT GGG TCA CCA TA 23

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

TGG GGG TGG AGC CCT CAG GCT 21

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

CAC AAC ATT CCA CCA AGC TC 20

- 30 -

## (2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

AAA TTC GCA GTC CCC AAC

18

## (2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

GTT TCC CTC TTC TTG CTG T

19

## (2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

TTT TCT TTT GTC TTT GGG TAT

21

## (2) INFORMATION FOR SEQ ID NO:13:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

CCA ACT TAC AAG GCC TTT CTG

21

## (2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single

- 31 -

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

CAT CGT TTC CAT GGC TGC TAG GC

23

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

GTT TCC CTC TTC TTG CTG T

19

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

ATA CCC AAA GAC AAA AGA AAA

21

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 550 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 1..549

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

TCT TCC AAT TTG TCC TGG TTA TCG CTG GAT GTG TCT GCG GCG TTT TAT 48  
 Ser Ser Asn Leu Ser Trp Leu Ser Leu Asp Val Ser Ala Ala Phe Tyr  
 1 5 10 15

CAT ATT CCT CTT CAT CCT GCT GCT ATG CCT CAT CTT CTT ATT GGT TCT 96  
 His Ile Pro Leu His Pro Ala Ala Met Pro His Leu Leu Ile Gly Ser  
 20 25 30

TCT GGA TTA TCA AGG TAT GTT GCC CGT TTG TCC TCT AAT TCC AGG ATC 144  
 Ser Gly Leu Ser Arg Tyr Val Ala Arg Leu Ser Ser Asn Ser Arg Ile

- 32 -

35 40 45

AAC AAC AAC ATG CAA AAC CTG CAC GAC TCC TGC TCA AGG CAA CTC TAC 192  
 Asn Asn Asn Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln Leu Tyr  
 50 55 60

GTT TCC CTC ATG TTG CTG TAC AAA ACC TAC GGA GAG AAA TTG CAC CTG 240  
 Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Glu Lys Leu His Leu  
 65 70 75

TAT TCC CAT CCC ATC GTC CTG GGC TTT CGC AAA ATA CCT ATG GGA GTG 288  
 Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met Gly Val  
 85 90 95

GGC CTC AGT CCG TTT CTC TTG GCT CAG TTT ACT AGT GCC ATT TGT TCA 336  
 Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile Cys Ser  
 100 105 110

GTG GTT CGT AGG GCT TTC CCC CAC TGT TTG GCT TTC AGC TAT ATG GAT 384  
 Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr Met Asp  
 115 120 125

GAT GTG GTA TTG GGG GCC AAG TCT GTA CAG CAT CGT GAG GCC CTT TAT 432  
 Asp Val Val Leu Gly Ala Lys Ser Val Gln His Arg Glu Ala Leu Tyr  
 130 135 140

ACC GCT GTT ACC AAT TTT CTT TTG TCT CTG GGT ATA CAT TTA AAC CCT 480  
 Thr Ala Val Thr Asn Phe Leu Leu Ser Leu Gly Ile His Leu Asn Pro  
 145 150 155 160

AAC AAA ACA AAA AGA TGG GGT TAT TCC CTA AAC TTC ATG GGT TAC ATA 528  
 Asn Lys Thr Lys Arg Trp Gly Tyr Ser Leu Asn Phe Met Gly Tyr Ile  
 165 170 175

ATT GGA AGT TGG GGA ACA TTG C 550  
 Ile Gly Ser Trp Gly Thr Leu  
 180

## (2) INFORMATION FOR SEQ ID NO:18:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 183 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Ser Ser Asn Leu Ser Trp Leu Ser Leu Asp Val Ser Ala Ala Phe Tyr  
 1 5 10 15

His Ile Pro Leu His Pro Ala Ala Met Pro His Leu Leu Ile Gly Ser  
 20 25 30

Ser Gly Leu Ser Arg Tyr Val Ala Arg Leu Ser Ser Asn Ser Arg Ile  
 35 40 45

Asn Asn Asn Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln Leu Tyr  
 50 55 60

Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Glu Lys Leu His Leu  
 65 70 75 80

Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met Gly Val  
 85 90 95

- 33 -

Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile Cys Ser  
 100 105 110  
 Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr Met Asp  
 115 120 125  
 Asp Val Val Leu Gly Ala Lys Ser Val Gln His Arg Glu Ala Leu Tyr  
 130 135 140  
 Thr Ala Val Thr Asn Phe Leu Leu Ser Leu Gly Ile His Leu Asn Pro  
 145 150 155 160  
 Asn Lys Thr Lys Arg Trp Gly Tyr Ser Leu Asn Phe Met Gly Tyr Ile  
 165 170 175  
 Ile Gly Ser Trp Gly Thr Leu  
 180

## (2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 550 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

- (ix) FEATURE:  
 (A) NAME/KEY: CDS  
 (B) LOCATION: 2..550

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

T CTT CCA ATT TGT CCT GGT TAT CGG TGG ATG TGT CTG CGG CGT TTT 46  
 Leu Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe 15  
 1 5 10  
 ATC ATA TTC CTC TTC ATC CTG CTG CTA TGC CTC ATC TTC TTA TTG GTT 94  
 Ile Ile Phe Leu Phe Ile Leu Leu Cys Leu Ile Phe Leu Leu Val 30  
 20 25  
 CTT CTG GAT TAT CAA GGT ATG TTG CCC GTT TGT CCT CTA ATT CCA GGA 142  
 Leu Leu Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Ile Pro Gly 45  
 35 40 45  
 TCA ACA ACA ACA TGC AAA ACC TGC ACG ACT CCT GCT CAA GGC AAC TCT 190  
 Ser Thr Thr Thr Cys Lys Thr Cys Thr Thr Pro Ala Gln Gly Asn Ser 60  
 50 55 60  
 ACG TTT CCC TCA TGT TGC TGT ACA AAA CCT ACG GAG AGA AAT TGC ACC 238  
 Thr Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Glu Arg Asn Cys Thr 75  
 65 70 75  
 TGT ATT CCC ATC CCA TCG TCC TGG GCT TTC GCA AAA TAC CTA TGG GAG 286  
 Cys Ile Pro Ile Pro Ser Ser Trp Ala Phe Ala Lys Tyr Leu Trp Glu 95  
 80 85 90 95  
 TGG GCC TCA GTC CGT TTC TCT TGG CTC AGT TTA CTA GTG CCA TTT GTT 334  
 Trp Ala Ser Val Arg Phe Ser Trp Leu Ser Leu Leu Val Pro Phe Val 110  
 100 105 110  
 CAG TGG TTC GTA GGG CTT TCC CCC ACT GTT TGG CTT TCA GCT ATA TGG 382  
 Gln Trp Phe Val Gly Leu Ser Pro Thr Val Trp Leu Ser Ala Ile Trp 125  
 115 120 125

- 34 -

ATG ATG TGG TAT TGG GGG CCA AGT CTG TAC AGC ATC GTG AGG CCC TTT 430  
 Met Met Trp Tyr Trp Gly Pro Ser Leu Tyr Ser Ile Val Arg Pro Phe  
 130 135 140  
 ATA CCG CTG TTA CCA ATT TTC TTT TGT CTC TGG GTA TAC ATT TAA ACC 478  
 Ile Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val Tyr Ile \* Thr  
 145 150 155  
 CTA ACA AAA CAA AAA GAT GGG GTT ATT CCC TAA ACT TCA TGG GTT ACA 526  
 Leu Thr Lys Gln Lys Asp Gly Val Ile Pro \* Thr Ser Trp Val Thr  
 160 165 170 175  
 TAA TTG GAA GTT GGG GAA CAT TGC 550  
 \* Leu Glu Val Gly Glu His Cys  
 180

## (2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 183 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Leu Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe Ile  
 1 5 10 15  
 Ile Phe Leu Phe Ile Leu Leu Leu Cys Leu Ile Phe Leu Leu Val Leu  
 20 25 30  
 Leu Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Ile Pro Gly Ser  
 35 40 45  
 Thr Thr Thr Cys Lys Thr Cys Thr Thr Pro Ala Gln Gly Asn Ser Thr  
 50 55 60  
 Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Glu Arg Asn Cys Thr Cys  
 65 70 75 80  
 Ile Pro Ile Pro Ser Ser Trp Ala Phe Ala Lys Tyr Leu Trp Glu Trp  
 85 90 95  
 Ala Ser Val Arg Phe Ser Trp Leu Ser Leu Leu Val Pro Phe Val Gln  
 100 105 110  
 Trp Phe Val Gly Leu Ser Pro Thr Val Trp Leu Ser Ala Ile Trp Met  
 115 120 125  
 Met Trp Tyr Trp Gly Pro Ser Leu Tyr Ser Ile Val Arg Pro Phe Ile  
 130 135 140  
 Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val Tyr Ile \* Thr Leu  
 145 150 155 160  
 Thr Lys Gln Lys Asp Gly Val Ile Pro \* Thr Ser Trp Val Thr \*  
 165 170 175  
 Leu Glu Val Gly Glu His Cys  
 180